ANALYSIS

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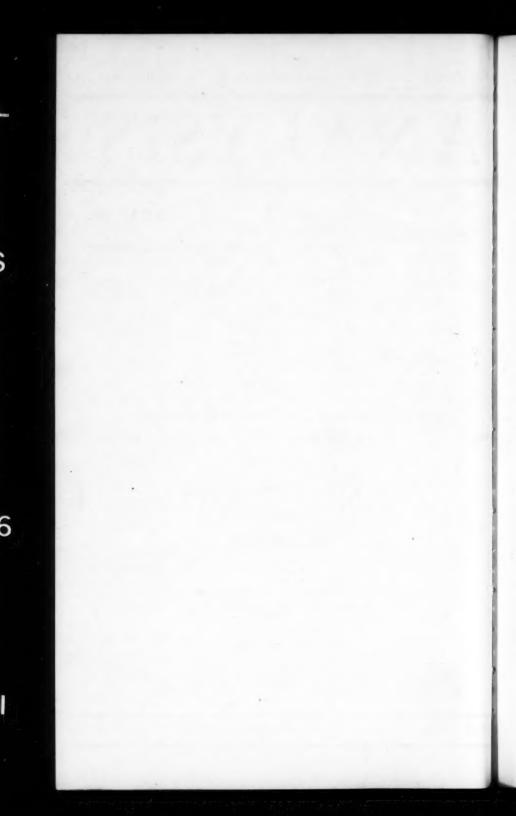THREE SHILLINGS AND SIXPENCE NET

REPORT ON ANALYSIS "PROBLEM" No. 8

"HOW CAN I THINK IT POSSIBLE THAT I MIGHT BE MISTAKEN?"

By A. M. MacIver

THIS problem had no solvers. In fact there were only two competitors, one of whom did not even see the point of it and the other thought it could be dodged. I find this not only disappointing but odd (though not quite unexpected). Can it be that there is really no problem? If so, I wish someone would explain to me what confusion has led me to think that there is. As I wrote to the late Margaret Macdonald when she asked me for " an ANALYSIS problem ", I have been bothered by this one for years without finding a solution to it which has satisfied me. (I actually offered it in passing to the readers of ANALYSIS as long ago as 1938[1]) But, though I should like to think that others find it as difficult as I do and that this is the reason why nobody has produced a solution now, I am afraid I don't. My guess is that nobody has tried. I have offered it to a good many people over the years and have never yet found a philosopher who seemed interested enough to be troubled by it. But I have never been made to understand why not.

At first sight, at least, it seems to be exceptional among philosophical problems in being practically serious. A statesman or a judge (and, one would hope, even a philosopher) often wants to "make sure that he is right" in his judgments. What is meant by this is not that he wants to be " assured " that he is right in the sense of being anaesthetised to anything which might tempt him to judge otherwise. There are those who do want " assurance " in this sense, but it is not intellectually respectable. An intellectual conscience requires you to " make sure that you are right " by hunting for evidence *against* what you think and being ready to change your mind if you find it. This seems to imply that it is possible to be of an opinion and yet allow that it might be false. But—and here comes our problem—when we ask what this means, it looks like a self-contradiction. To think p is to think that p is true, while to think that p might be false is *not* to think that it is true, but at most that it *might*

be true, so how can the two be combined? (Do I think that it is raining if I think that perhaps it is not?) It looks as if the dogmatists, who say that an open mind must be an empty mind, had the support of the logicians—as if anyone who allows that he may be wrong must dilute his belief to a mere " may be or may not ", and anyone who has any definite opinion must claim infallibility, at least on that subject and on that occasion. (This doesn't, of course, mean that anyone must *be* infallible, but that we must all *think* we are.)

When I hoped that there would be many competitors, I expected someone to fall into the trap of supposing that this was just another " self-reference " problem. Nobody did, and it isn't : what is in question is not how I could think that I might be mistaken in thinking that I might be mistaken, but in thinking something else. But it is to this extent *like* a " self-reference " problem, that the " something else " must be something that I think *at the same time*. I can, and do, think that I have myself been mistaken *in the past* as easily as I can think that other people are mistaken in the present. We can change our opinions as well as differ in opinion from one another, and, if I have changed my opinion, I think that what I myself formerly thought was wrong. It is only thinking that what I think *now* may be wrong that seems to have something odd about it.

It might be argued that, if I can admit that I have been mistaken in the past, this is evidence which I must allow that it is *possible* for me to be mistaken, and therefore that it is possible for me to be mistaken *now*. But unfortunately this argument does not give us what we need. If the possibility is not in itself one which I cannot conceive—if, that is to say, there is really, as common sense seems to tell us there must be, something sophistical about the apparent logical difficulty—then the memory of past occasions when I have been mistaken, and likewise the observation of occasions on which other people are mistaken, could direct my attention to the possibility that I might be mistaken now, and even enable me to estimate the *likelihood* that in fact I *am* mistaken. (I could, for example, reckon that I am more likely to be mistaken when it would be to my advantage that what I believe to be the case should be the case.) But the most that necessarily follows from the fact that I have been mistaken in the past is that it is " possible that I should be mistaken now " in the sense that I *might have been* mistaken now, which I can recognise and yet be unable to think it possible that I *am* mistaken. From the fact that I have had

colds in the past I know that I am liable to colds, and therefore can reflect that I *might have had* a cold *now*, but this does not mean that I am not quite sure that in fact I have not got a cold now. I could, alternatively, reflect that I might have a cold now without knowing it, but that would be quite a different proposition and one which the mere fact that I have had colds in the past would not be enough to establish. The counterpart of this latter (for " being mistaken " instead of " having a cold ") is more like what we need. But than the question still remains : is this possible?

The sense of " may " (or " might ") in question *seems to be* that in which " It may be raining " could be enlarged to " It may be raining *so far as I know* ". But I can only say " seems to be ", because, when we look closer, we may wonder whether this is what we mean after all. When I say " It may be raining so far as I know ", what I mean is " I don't know that it is not raining ". Can we say that " I may be mistaken " means simply " I don't know that I am not mistaken "? " I may be mistaken in thinking that it is raining " could then mean just " I *think* that it is raining but I don't *know* whether it is or isn't." That is to say, what was asserted would just be that a case of *thinking* was not a case of *knowing*. I am afraid this only involves us in the old controversies over what constitutes *knowledge* without in the end helping us. In colloquial usage the use of the verb " know " (rather than " think ", " believe ", " suppose ", etc.) is most often, I think, simply an indication that the speaker himself is confident that what is said to be " known " is true. (Loosely put, " he knows " means " he thinks and I think he is right ", and " I know " means " I am quite sure ".) In this sense I could not honestly say " I don't know " to any question to which I was confident of the correct answer. (My confidence might be misplaced, but this could not influence me, for I could not be aware that my confidence was unjustified without losing it.) In this sense we should never in fact say " I don't know that I am not mistaken in thinking p ", but, if anyone did, he could only mean that he did not think p with any confidence. So, if " I may be mistaken " meant *this*, it would be true that nobody could allow that he might be mistaken unless he really had no definite opinion. But there is also a sense in which " I know " means " I have conclusive evidence ", while " I think " means " I have *some* rational evidence though not conclusive ". To the question " Has Jones gone to London to-day? " I may answer " I don't know but I think so ", which I could expand,

if required, to " I know he was talking of going and I haven't seen him around all day." In this case I might even *say* " I think so but I may be mistaken "—meaning, and expecting to be understood to mean, " I have some evidence that he has gone but it is not conclusive ". (The philosophers who cannot see my problem may perhaps think that this is the only case, for it is true that, if the words are taken in this sense, there is no difficulty.) But in this case, if it turned out after all that Jones had not gone to London, I should not in fact admit that I had been mistaken (whatever I may have said) : all that I committed myself to was having evidence that he had gone, and that I had. If, however, it turned out that I had not the evidence which I supposed myself to have—if, say, Jones never really told me that he planned to go but I only dreamt it, or if I had actually myself seen him in Southampton that morning but had forgotten it— then I should allow that I had been mistaken, but not in the sense in which I allowed that I " might be mistaken " at the time. And, if it is suggested that " I think " does not involve any claim to have any rational grounds for a belief, and that " I may be mistaken " simply adds the admission that in fact I have none, this will not do either. In that case anyone who admitted that his beliefs had no rational grounds would have to admit that he might be mistaken, but some at least of those who believe things as a matter of religious faith glory in the fact that their belief is irrational (" *Credo quia absurdum* "), but these are the last people to admit that what their church teaches might be wrong. (To sum up, if " I may be mistaken " can be equated with " I don't know that I am not mistaken ", then there are three possible interpretations of " I think p but I may be mistaken "— (1) " I think p but don't think that I am right in thinking it ", (2) " I have some evidence for p but it is not conclusive ", and (3) " I think p but have no evidence for it "—but none of these is what we are in fact trying to say.)

If I may attempt a solution of my own in the absence of anyone else's, let me suggest that perhaps " thinking it possible one might be mistaken " does not mean anything like what it seems to say. I could be—and indeed certainly am—*liable* to error, and that I am so liable anyone can think, including myself, but (as we have seen) this is not what is in question here, for to think that I am liable to error is consistent with being certain that I am not in error on some particular occasion. It is also possible that I should be actually in error on some particular occasion—say, at this moment—and that this is in fact so is

something which anyone else can believe, but not I myself except at some other time, because, as soon as I came to believe it, I should no longer *be*, but only *have been*, in error. Neither of these propositions is what "I think I may be wrong", used in the way which gives rise to this problem, expresses, but it seems to be closer to the second than to the first. It seems to involve somehow *envisaging as actually true* the proposition "What I now take to be true is false". But, when I try to make clear what this means, it begins to look suspiciously like nonsense. The knot in the problem is just that, although it looks like nonsense, it seems important to affirm it. Such a form of words as " I am aware that I may be wrong " has a linguistic function —it is not only grammatically a statement but its use may be justified or unjustified, being justified if, however firm my beliefs, I am still on the look-out for evidence against them and ready to change them if I find it, unjustified if I am not. Perhaps this, and nothing else, is what it means. Perhaps it is nothing but an oddly misleading way of saying that, even I have no doubt that I am right, yet, *if* something were to happen which I must think will *not* happen (namely, that I should be proved to be wrong), *then* I should alter my opinion.

But I am still not happy about this. For one thing, there seems to be a difference between " being *ready* to change one's mind " (which is commendable) and " being *liable* to change one's mind " (which may not be). We may say that the one is being disposed to change one's mind *for good reasons* and the other being disposed to change one's mind *without* good reasons. But even the man who is merely vacillating in his opinions presumably *himself thinks* that he has good reasons for every change. The distinction is one which I can apply to *other people*, distinguishing those who change their opinions for reasons which I myself consider good from those who change them for reasons which I do not, but can I apply it to *myself* (except to *past* changes in my opinions *other than the latest*)? Moreover, what is required is not only that I should *declare myself* disposed to change my mind for good reason, but that I should actually *be* (or at least *think myself*) so disposed, and it is a fact of experience that to *be* so disposed, if it is possible at all, requires continuous effort and resistance to temptation ; but why should I ever make this effort unless I recognise that, if I do not, then I am in danger of being left with opinions which are false? But this seems to bring us right back to our original difficulty, because it seems to imply that I must recognise that

my present opinions *perhaps are* false. If what we call " thinking
it possible we might be mistaken " is *the reason why* we are ready
to change our minds, how can it simply *be* that readiness itself?

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A NOTE ON 'KNOWING THAT'

By ROBERT AMMERMAN

IN a recent issue of this journal[1] Mr. Hartland-Swann has
suggested that we would be well-advised to deny that there is
any basic difference between knowing *that* and knowing *how*.
To say that Jones knows *that* the earth is round, he contends, is
only to say that Jones has the capacity (knows *how*) to state
correctly that the earth is round. In general, Hartland-Swann
argues " that all cases of knowing *that* . . . can, and indeed must
if ' know ' is a capacity verb and therefore dispositional, be
reduced ultimately to cases of knowing *how*."[2] I would like to
make some remarks concerning this proposed reduction.

No decision concerning the adequacy or inadequacy of such
a reduction can be made until it is perfectly clear what is being
contended. Hartland-Swann writes that the capacity involved
in every case of knowing *that* is " the capacity to state correctly
what is the case."[3] The word 'correctly', however, is ambiguous
and admits of several interpretations. On the one hand, the
author might mean that the statement " P knows *that* X " is
ultimately reducible to the statement " P has the capacity to
state with *grammatical* correctness that X is the case ". Thus,
assuming John to be in the kitchen, the person who can say
" John is in the kitchen " *knows* that John is in the kitchen,
whereas the person whose command of grammar is weak and
who can only say " John are in the kitchen " does not, indeed
cannot, know of John's whereabouts. It is difficult to believe
that Hartland-Swann intends to use the word ' correctly ' in this
sense.

[1] " The Logical Status of ' Knowing That ' " in ANALYSIS, Vol. 16, No. 5, pp. 111–115.
[2] Ibid., p. 114.   [3] Ibid.

The statement " P has the capacity to state correctly what is the case " might, on the other hand, be taken simply to mean that P is able to state what is correct, i.e. capable of making a true statement. If we attach this meaning to the word ' correctly ', then the statement appears to be redundant; for there does not seem to be any difference between stating what is the case and stating *correctly* what is the case. More important than this apparent redundancy is the following difficulty which arises from this second interpretation. I now have the capacity to state that Hitler still lives. I also have the capacity to state that Hitler is dead. One of these statements must be true and the other must be false. Since I am able to state both of them and since one of them must describe what is the case, it follows that I must now have the capacity to state correctly what is the case. And to have this capacity, according to Hartland-Swann, is to *know* what is the case. Hence, I must now know *that* Hitler still lives or *that* Hitler is dead, whichever the case may be. Can we accept this consequent of Hartland-Swann's reduction? Is there not an important difference between the person who *knows* Hitler's present status and the person, such as myself, who is able merely to guess and who happens to be right? Hartland-Swann's reduction seems to obliterate the distinction between genuine knowledge and right guessing or true belief; and, surely, this is a distinction which any adequate analysis of knowing *that* must preserve.

There is, however, a third possible interpretation of the proposed reduction which avoids the above-mentioned difficulty and which accords better with traditional analyses of knowledge. Let us construe the statement " P has the capacity to state correctly what is the case " to mean that P is able to state what is the case and P has sufficient *reasons* or grounds for such a statement. This would admittedly be an unusual use of the word ' correctly ', but such a sense could conceivably be attached to it. Will this liberal interpretation of the reduction render it adequate? Unfortunately, the answer is no. The grounds for P's knowledge *that* something is the case will in most instances consist of other propositions that he knows. If P knows, say, that X is the case, then his evidence for X will consist of his knowledge that Y or Z or W are the case. If we then attempt to reduce P's knowledge that Y is the case to his capacity to state correctly (i.e. with grounds) that Y is the case, we will then have to consider the grounds for P's knowledge that Y is the case. In short, if knowing *that* involves having

grounds or evidence (as it surely does), then we can never reduce knowing *that* to a verbal capacity alone, since knowing something to be the case involves knowing something else to be the case. Any attempt to reduce knowing *that* to knowing *how* will inevitably prove to be circular.

Under no interpretation, then, does the proposed reduction turn out to be both faithful to the essential features of knowing *that* and non-circular. In other words, it is not a reduction at all, or at least it is not a reduction in the usual sense of that word. It is conceivable that Hartland-Swann means by the word ' reduction' something other than what I have taken him to mean ; but, if that is the case, one can only wonder what this other meaning may be for it certainly has not been made clear.

If, as Hartland-Swann seems to believe, the only alternative to his reduction is a return to the view that ' knowing' is an episodic verb, then we must swallow this bitter pill as best we can. The considerations brought forward in this paper seem to indicate clearly that no purely dispositional analysis of knowing *that* is possible, and this is a sufficient reason for continuing to make a logical distinction between the two kinds of knowledge.

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GOOD AND EVIL

By P. T. GEACH

MY first task will be to draw a logical distinction between two sorts of adjectives, suggested by the distinction between *attributive* adjectives (e.g. ' a red book ') and *predicative* adjectives (e.g. ' this book is red ') ; I shall borrow this terminology from the grammars. I shall say that in a phrase ' an A B ' ('A' being an adjective and ' B ' being a noun) 'A' is a (logically) predicative adjective if the predication ' is an A B ' splits up logically into a pair of predications ' is a B ' and ' is A' ; otherwise I shall say that 'A' is a (logically) attributive adjective. Henceforth I shall use the terms ' predicative adjective ' and ' attributive adjective ' always in my special logical sense, unless the contrary is shown by my inserting the adverb ' grammatically '.

There are familiar examples of what I call attributive adjectives. ' Big ' and ' small ' are attributive ; ' x is a big flea ' does not split up into ' x is a flea ' and ' x is big ', nor ' x is a small elephant ' into ' x is an elephant ' and ' x is small ' ; for if these analyses were legitimate, a simple argument would show that a big flea is a big animal and a small elephant a small animal. Again, the sort of adjective that the mediaevals called *alienans* is attributive ; ' x is a forged banknote ' does not split up into ' x is a banknote' and ' x is forged', nor ' x is the putative father of y ' into ' x is the father of y ' and ' x is putative'. On the other hand, in the phrase ' a red book ' ' red ' is a predicative adjective in my sense, although not grammatically so, for ' is a red book ' logically splits up into ' is a book ' and ' is red '.

I can now state my first thesis about good and evil : ' good ' and ' bad ' are always attributive, not predicative, adjectives. This is fairly clear about ' bad ' because ' bad ' is something like an *alienans* adjective ; we cannot safely predicate of a bad A what we predicate of an A, any more than we can predicate of a forged banknote or a putative father what we predicate of a banknote or a father. We actually call forged money ' bad ' ; and we cannot infer e.g. that because food supports life bad food supports life. For ' good ' the point is not so clear at first sight, since ' good ' is not *alienans*—whatever holds true of an A as such holds true of a good A. But consider the contrast in such a pair of phrases as ' red car ' and ' good car '. I could ascertain

that a distant object is a red car because I can see it is red and a keener-sighted but colour-blind friend can see it is a car; there is no such possibility of ascertaining that a thing is a good car by pooling independent information that it is good and that it is a car. This sort of example shows that 'good' like 'bad' is essentially an attributive adjective. Even when 'good' or 'bad' stands by itself as a predicate, and is thus grammatically predicative, some substantive has to be understood; there is no such thing as being just good or bad, there is only being a good or bad so-and-so. (If I say that something is a good or bad *thing*, either 'thing' is a mere proxy for a more descriptive noun to be supplied from the context; or else I am trying to use 'good' or 'bad' predicatively, and its being grammatically attributive is a mere disguise. The latter attempt is, on my thesis, illegitimate.)

We can indeed say *simpliciter* 'A is good' or 'A is bad', where 'A' is a proper name; but this is an exception that proves the rule. For Locke was certainly wrong in holding that there is no nominal essence of individuals; the continued use of a proper name 'A' always presupposes a continued reference to an individual as being the same X, where 'X' is some common noun; and the 'X' expresses the nominal essence of the individual called 'A'. Thus use of the proper name 'Peter Geach' presupposes a continuing reference to the same *man*; use of 'the Thames' a continuing reference to the same *river*; and so on. In modern logic books you often read that proper names have no meaning, in the sense of 'meaning' in which common nouns are said to have meaning; or (more obscurely) that they have no 'connotation'. But consider the difference between the understanding that a man has of a conversation overheard in a country house when he knows that 'Seggie' stands for a man, and what he has if he is uncertain whether 'Seggie' stands for a man, a Highland stream, a village, or a dog. In the one case he knows *what* 'Seggie' means, though not *whom*; in the other case he does not know *what* 'Seggie' means and cannot follow the drift of the conversation. Well, then if the common noun 'X' expresses the nominal essence of the individual called 'A'; if *being the same X* is a condition whose fulfilment is presupposed by our still calling an individual 'A'; then the meaning of 'A is good/bad' said *simpliciter*, will be 'A is a good/bad X'. E.g. if 'Seggie' stands for a man, 'Seggie is good' said *simpliciter* will mean 'Seggie is a good man', though context might make it mean 'Seggie is a good deer-stalker', or the like.

The moral philosophers known as Objectivists would admit all that I have said as regards the ordinary uses of the terms ' good ' and ' bad ' ; but they allege that there is an essentially different, predicative, use of the terms in such utterances as ' pleasure is good ' and ' preferring inclination to duty is bad ', and that this use alone is of philosophical importance. The ordinary uses of ' good ' and ' bad ' are for Objectivists just a complex tangle of ambiguities. I read an article once by an Objectivist exposing these ambiguities and the baneful effects they have on philosophers not forewarned of them. One philosopher who was so misled was Aristotle ; Aristotle, indeed, did not talk English, but by a remarkable coincidence ἀγαθός had ambiguities quite parallel to those of ' good '. Such coincidences are, of course, possible ; puns are sometimes translatable. But it is also possible that the uses of ἀγαθός and ' good ' run parallel because they express one and the same concept ; that this is a philosophically important concept, in which Aristotle did well to be interested ; and that the apparent dissolution of this concept into a mass of ambiguities results from trying to assimilate it to the concepts expressed by ordinary predicative adjectives. It is mere prejudice to think that either all things called ' good ' must satisfy some one condition, or the term ' good ' is hopelessly ambiguous. A philosopher who writes off most of the uses of ' good ' as trivial facts about the English language can, of course, with some plausibility, represent the remaining uses of ' good ' as all expressing some definite condition fulfilled by good things—e.g. that they either contain, or are conducive to, pleasure ; or again that they satisfy desire. Such theories of goodness are, however, open to well-known objections ; they are cases of the Naturalistic Fallacy, as Objectivists say. The Objectivists' own theory is that ' good ' in the selected uses they leave to the word does not supply an ordinary, ' natural ', description of things, but ascribes to them a simple and indefinable *non*-natural attribute. But nobody has ever given a coherent and understandable account of what it is for an attribute to be non-natural. I am very much afraid that the Objectivists are just playing fast and loose with the term ' attribute '. In order to assimilate ' good ' to ordinary predicative adjectives like ' red ' and ' sweet ' they call goodness an attribute ; to escape undesired consequences drawn from the assimilation, they can always protest, ' Oh no, not like that. Goodness isn't a *natural* attribute like redness and sweetness, it's a non-natural attribute '. It is just as though somebody

thought to escape the force of Frege's arguments that the number 7 is not a figure, by saying that it is a figure, only a non-natural figure, and that this is a possibility Frege failed to consider.

Moreover, can a philosopher offer philosophical utterances like ' pleasure is good' as an *explanation* of how he means ' good' to be taken in his discussions ? " Forget the uses of ' good' in ordinary language " says the Objectivist ; " in our discussion it shall mean what I mean by it in such typical remarks as ' pleasure is good'. You, of course, know just how I want you to take these. No, of course I cannot explain further : don't you know that ' good' in my sense is a simple and un-definable term ? " But how can we be asked to take for granted at the outset that a peculiarly philosophical use of words neces-sarily means anything at all ? Still less can we be expected at the outset to know what this use means.

I conclude that Objectivism is only the pretence of a way out of the Naturalistic Fallacy : it does not really give an account of how ' good' differs in its logic from other terms, but only darkens counsel by words without knowledge.

What I have said so far would meet with general approval by contemporary ethical writers at Oxford (whom I shall henceforth call the Oxford Moralists) ; and I now have to consider their positive account of ' good'. They hold that the features of the term's use which I have described derive from its function's being primarily not descriptive at all but commen-datory. ' That is a good book' means something like ' I recom-mend that book' or ' choose that book'. Clearly, though, even if the primary force of ' good' is commendation there are many cases where its force is purely descriptive—' Hutton was batting on a good wicket', in a newspaper report, would not mean ' What a wonderful wicket Hutton was batting on. May you have such a wicket when you bat'. The Oxford Moralists account for such cases by saying that here ' good' is, so to say, in quotation marks ; Hutton was batting on a ' good' wicket, i.e. a wicket such as cricket fans would call ' good', i.e. would commend and choose.

I totally reject this view that ' good' has not a primarily descriptive force. Somebody who did not care two pins about cricket, but fully understood how the game worked (not an impossible supposition), could supply a purely descriptive sense for the phrase ' good batting wicket' regardless of the tastes of cricket fans. Again if I call a man a good burglar or a good

cut-throat I am certainly not commending him myself; one can imagine circumstances in which these descriptions would serve to guide another man's choice (e.g. if a commando leader were choosing burglars and cut-throats for a special job), but such circumstances are rare and cannot give the primary sense of the descriptions. It ought to be clear that calling a thing a good A does not influence choice unless the one who is choosing happens to want an A; and this influence on action is not the logically primary force of the word 'good'. 'You have ants in your pants', which obviously has a primarily descriptive force, is far closer to affecting action than many uses of the term 'good'. And many uses of the word 'good' have no reference to the tastes of a panel of experts or anything of the sort; if I say that a man has a good eye or a good stomach my remark has a very clear descriptive force and has no reference to any panel of eye or stomach fanciers.

So far as I can gather from their writings, the Oxford Moralists would develop two lines of objection against the view that 'good' has a primarily descriptive force. First, if we avoid the twin errors of the Naturalistic Fallacy and of Objectivism we shall see that there is no one description, 'natural' or 'non-natural', to which all good things answer. The traits for which a thing is called 'good' are different according to the kind of thing in question; a knife is called 'good' if it is UVW, a stomach if it is XYZ, and so on. So, if 'good' did have a properly descriptive force this would vary from case to case: 'good' applied to knives would express the attributes UVW, 'good' as applied to stomachs would express the attributes XYZ, and so on. If 'good' is not to be merely ambiguous its primary force must be taken to be the unvarying commendatory force, not the indefinitely varying descriptive force.

This argument is a mere fallacy; it is another example of assimilating 'good' to ordinary predicative adjectives, or rather it assumes that this assimilation would have to be all right if the force of 'good' were descriptive. It would not in fact follow, even if 'good' were an ordinary predicative adjective, that if 'good knife' means the same as 'knife that is UVW', 'good' means the same as 'UVW'. 'Triangle with all its sides equal' means the same as 'triangle with three sides equal', but you cannot cancel out 'triangle' and say that 'with all its sides equal' means the same as 'with three sides equal'. In the case of 'good' the fallacy is even grosser; it is like thinking that 'square of' means the same as 'double of' because 'the square

of 2 ' means the same as ' the double of 2 '. This mathematical analogy may help to get our heads clear. There is no one number by which you can always multiply a number to get its square : but it does not follow either that ' square of ' is an ambiguous expression meaning sometimes ' double of ', sometimes ' treble of ', etc., or that you have to do something other than multiplying to find the square of a number ; and, given a number, its square is determinate. Similarly, there is no one description to which all things called ' good so-and-so's ' answer ; but it does not follow either that ' good ' is a very ambiguous expression or that calling a thing good is something different from describing it ; and given the descriptive force of 'A', the descriptive force of ' a good A' does not depend upon people's tastes.

" But I could know what ' good hygrometer ' meant without knowing what hygrometers were for ; I could not, however, in that case be giving a definite descriptive force to ' good hygrometer ' as opposed to ' hygrometer ' ; so ' good ' must have commendatory, not, descriptive force." The reply to this objection (imitated from actual arguments of the Oxford Moralists) is that if I do not know what hygrometers are for, I do not really know what ' hygrometer ' means, and *therefore* do not really know what ' good hygrometer ' means ; I merely know that I could find out its meaning by finding out what hygrometers were for—just as I know how I could find out the value of the square of the number of the people in Sark if I knew the number of people, and *so far* may be said to understand the phrase, ' the square of the number of the people in Sark '.

The Oxford Moralists' second line of objection consists in first asking whether the connexion between calling a thing ' a good A' and advising a man who wants an A to choose this one is analytic or empirical, and then developing a dilemma. It sounds clearly wrong to make the connexion a mere empirical fact ; but if we make it analytic, then ' good ' cannot have descriptive force, for from a mere description advice cannot be logically inferred.

I should indeed say that the connexion is not merely empirical ; but neither is it analytic. It belongs to the *ratio* of ' want ', ' choose ', ' good ', and ' bad ', that, normally, and other things being equal, a man who wants an A will choose a good A and will not choose a bad A—or rather will choose an A that he thinks good and will not choose an A that he thinks bad. This holds good whether the A's we are choosing between are knives, horses, or thieves ; *quidquid appetitur, appetitur sub specie boni.*

Since the qualifying phrase, 'normally and other things being equal', is necessary for the truth of this statement, it is not an analytic statement. But the presence of these phrases does *not* reduce the statement to a mere rough empirical generalization: to think this would be to commit a crude empiricist fallacy, exposed once for all by Wittgenstein. Even if not all A's are B's, the statement that A's are normally B's may belong to the *ratio* of an A. Most chess moves are valid, most intentions are carried out, most statements are veracious; none of these statements is just a rough generalization, for if we tried to describe how it would be for most chess moves to be invalid, most intentions not to be carried out, most statements to be lies, we should soon find ourselves talking nonsense. We shall equally find ourselves talking nonsense if we try to describe a people whose custom it was, when they wanted A's, to choose A's they thought bad and reject A's they thought good. (And this goes for *all* interpretations of 'A').

There is, I admit, much more difficulty in passing from ' man' to ' good/bad/man', or from ' human act' to ' good/ bad/human act', if these phrases are to be taken as purely descriptive and in senses determined simply by those of ' man' and ' human act'. I think this difficulty could be overcome; but even so the Oxford Moralists could now deploy a powerful weapon of argument. Let us suppose that we have found a clear descriptive meaning for ' good human act' and for ' bad human act', and have shown that adultery answers to the description ' bad human act'. Why should this consideration deter an intending adulterer? By what logical step can we pass from the supposedly descriptive sentence ' adultery is a bad human act' to the imperative ' you must not commit adultery'? It is useless to say ' It is your duty to do good and avoid doing evil '; either this is much the same as the unhelpful remark ' It is good to do good and avoid doing evil ', or else ' It is your duty ' is a smuggling in of an imperative force not conveyed by the terms ' good' and 'evil ', which are *ex hypothesi* purely descriptive.

We must allow in the first place that the question, ' Why should I '? or 'Why shouldn't I '? is a reasonable question, which calls for an answer, not for abusive remarks about the wickedness of asking; and I think that the only relevant answer is an appeal to something the questioner *wants*. Since Kant's time people have supposed that there is another sort of relevant reply—an appeal not to inclination but to the Sense of Duty.

Now indeed a man may be got by training into a state of mind in which ' You *must* not ' is a sufficient answer to ' Why shouldn't I? '; in which, giving this answer to himself, or hearing it given by others, strikes him with a quite peculiar awe; in which, perhaps, he even thinks he ' must not ' ask why he ' must not '. (Cf. Lewis Carroll's juvenile poem ' My Fairy ', with its devastating ' Moral : You mustn't '.) Moral philosophers of the Objectivist school, like Sir David Ross, would call this 'apprehension of one's obligations '; it does not worry them that, but for God's grace, this sort of training can make a man ' apprehend ' practically anything as his ' obligations '. (Indeed, they admire a man who does what he thinks he *must* do regardless of what he actually does; is he not acting from the Sense of Duty which is the highest motive?) But even if *ad hominem* ' You mustn't ' is a final answer to ' Why shouldn't I? ', it is no rational answer at all.

It can, I think, be shown that an action's being a good or bad human action is of itself something that touches the agent's desires. Although calling a thing ' a good A ' or ' a bad A ' does not of itself work upon the hearer's desires, it may be expected to do so if the hearer happens to be choosing an A. Now what a man cannot fail to be choosing is his manner of acting; so to call a manner of acting good or bad cannot but serve to guide action. As Aristotle says, acting well, εὐπραξία, is a man's aim *simpliciter*, ἁπλῶς, and *qua* man; other objects of choice are so only relatively, πρός τι, or are the objects of a particular man, τινός[1]; but *any* man has to choose how to act, so calling an action good or bad does not depend for its effect as a suasion upon any individual peculiarities of desire.

I shall not here attempt to explicate the descriptive force of ' good (bad) human action ' : but some remarks upon the logic of the phrase seem to be called for. In the first place, a tennis stroke or chess move is a human act. Are we to say, then, that the description ' good tennis stroke ' or ' good chess move ' is of itself something that must appeal to the agent's desire? Plainly not; but this is no difficulty. Although a tennis stroke or a chess move is a human act, it does not follow that a good tennis stroke or a good chess move is a good human act, because of the peculiar logic of the term ' good '; so calling a tennis stroke or a chess move good is not *eo ipso* an appeal to what an agent must be wanting.

Secondly, though we can sensibly speak of a good or bad

[1] *E.N.* 1139b 2-4.

human act, we cannot sensibly speak of a good or bad event, a good or bad thing to happen. ' Event ', like ' thing ', is too empty a word to convey either a criterion of identity or a standard of goodness ; to ask ' Is this a good or bad thing (to happen)? ' is as useless as to ask ' Is this the same thing that I saw yesterday? ' or ' Is the same event still going on? ', unless the emptiness of ' thing ' or ' event ' is filled up by a special context of utterance. Caesar's murder was a bad thing to happen to a living organism, a good fate for a man who wanted divine worship for himself, and again a good or bad act on the part of his murderers ; to ask whether it was a good or bad event would be senseless.

Thirdly, I am deliberately ignoring the supposed distinction between the Right and the Good. In Aquinas there is no such distinction. He finds it sufficient to talk of good and bad human acts. When Ross would say that there is a morally good action but not a right act, Aquinas would say that a good human intention had issued in what was, in fact, a bad action ; and when Ross would say that there was a right act but not a morally good action, Aquinas would say that there was a bad human act performed in circumstances in which a similar act with a different intention would have been a good one (e.g. giving money to a beggar for the praise of men rather than for the relief of his misery).

Since the English word ' right ' has an idiomatic predilection for the definite article—we speak of *a* good chess move but of *the* right move—people who think that doing right is something other than doing good will regard virtuous behaviour as consisting, not just in doing good and eschewing evil, but in doing, on every occasion, *the* right act for the occasion. This speciously strict doctrine leads in fact to quite laxist consequences. A man who just keeps on doing good and eschewing evil, if he knows that adultery is an evil act, will decide that (as Aristotle says) there can be no deliberating when or how or with whom to commit adultery.[1] But a man who believes in discerning, on each occasion, *the* right act for the occasion, may well decide that on this occasion, all things considered, adultery is *the* right action. Sir David Ross explicitly tells us that on occasion *the* right act may be the judicial punishment of an innocent man " that the whole nation perish not " : for in this case " the *prima facie* duty of consulting the general interest has proved more obligatory than the perfectly distinct *prima facie* duty of

[1] *E.N.* 1107*a* 16.

respecting the rights of those who have respected the rights of others ".[1] (We must charitably hope that for him the words of Caiaphas that he quotes just had the vaguely hallowed associations of a Bible text, and that he did not remember whose judicial murder was being counselled).[2]

I am well aware that much of this discussion is unsatisfying; some points on which I think I do see clear I have not been able to develop at proper length; on many points (e.g. the relation between desire and good, and the precise *ratio* of evil in evil acts), I certainly do not see clear. Moreover, though I have argued that the characteristic of being a good or bad human action is of itself bound to influence the agent's desires, I have not discussed whether an action of its nature bad is always and on all accounts to be avoided, as Aristotle thought. But perhaps, though I have not made everything clear, I have made some things clearer.

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[1] *The Right and the Good,* p. 61.
[2] Holding this notion of *the* right act, people have even held that some creative act would be *the* right act for a God—e.g. that a God would be obliged to create the best of all possible worlds, so that either this world of ours is the best possible or there is no good God. I shall not go further into this; it will be enough to say that what is to be expected of a good Creator is *a* good world, not *the* right world.

PROPOSITIONAL FUNCTIONS

By GUSTAV BERGMANN

THE notion of a propositional function is both useless and harmful. The harm it does is the specious plausibility it lends to certain errors. I propose to show first that it is useless. Then I shall state the two major errors which it may cause or facilitate and explain the *structural* connections between the notion and these errors. But I shall not attempt to argue, *historically*, that some philosophers committed those errors because, among other things, they uncritically accepted the notion.

The notion of a propositional function has been employed by some of those who accepted as well as by some of those who now reject artificial languages (calculi) as tools of philosophical analysis. This adds credence to what I shall take for granted, namely, that the point I want to make does not depend on what is at issue between the two parties in the current debate about the use and usefulness of calculi. In other words, no bias is introduced by making my argument in terms of a calculus. My reason for choosing this procedure is that, whatever one may think about the use or usefulness of calculi in general, the point at hand is in this way made much more easily and without any possibility of distortion.

To be a suitable tool for philosophical analysis, a calculus must be constructed formally or, as one also says, *syntactically*. Philosophers using calculi are above all interested in those which show some promise of becoming, upon *interpretation*, what is called an ideal language. All artificial languages ever proposed for this role contain the lower functional calculus (or a syntactical equivalent of it) with both subject and predicate constants and, therefore, *a fortiori*, the monadic predicate calculus which is, roughly speaking, the lower functional calculus without primitive relational signs. The monadic predicate calculus with constants is the simplest for which the notion of a propositional function can be formed. Thus I shall use it in my argument. In all respects but one, I could just as well use the lower functional calculus. To this one respect I shall attend presently.

It will not be necessary to rehearse the familiar steps in the construction of our calculus. So I shall merely call attention to what matters for my purpose. Notice, first, that among the

primitive signs of the calculus there are two classes of " terms ",
called *particulars* ('a', 'b', 'c', ...) and *predicates* ('F',
'G', 'H', ...), and two classes of " variables ", 'x', 'y',
'z', ... and 'f', 'g', 'h', ..., " corresponding " to the
former and to the latter, respectively. Notice, next, that among
the rules of the calculus there are some that determine which
strings of signs are and which are not " sentences ". It will be
expedient and not introduce any bias to assume these rules to
be such that no string containing a " free " variable is a sentence.
Remember, finally, that the words I surrounded with quotation
marks all refer to syntactical notions, or, what amounts to the
same thing, for all syntactical purposes their meaning is com-
pletely exhausted by the rules of the calculus. E.g., certain rules
apply to a sign if and only if it is a term, or a term of a certain
kind.

Syntactically, the two kinds of terms are alike in three
respects. (1) Whether or not a term is a particular or a predicate
depends on its shape and on nothing else. (2) Taken by itself,
neither a particular nor a predicate is a sentence. (3) Strings
consisting of one predicate and one particular are sentences;
strings consisting of either two predicates or two particulars are
not. Strings are ordered. Conventionally one writes the predi-
cate first; the particular, often in a parenthesis, second, as in
'$F(a)$'. A little reflection shows that the distinction between
particulars and predicates which this order introduces is merely
apparent. All that matters is that the string contain exactly one
term of each kind; the kind to which a term belongs is determined
by its shape; hence there is no need to mark it once more by
the sign's place in the string. The only real difference between
the particulars and the predicates of our calculus is that only the
variables corresponding to the former are quantified. However,
that is not a difference between the terms themselves. (In the
higher functional calculus this difference disappears.)

When it comes to interpretation, there is a difference between
particulars and predicates. The former are made to name *indivi-
duals*; the latter, *characters*. In philosophical discourse "indivi-
dual", "character", and "name" are problematic. Problematic
uses require explication. I explicate "individual" and "character"
so that something is an individual if and only if it can be named
by a particular and a character if and only if it can be named by
a predicate of the ideal language.[1] There are many who would

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[1] For a detailed discussion see " Russell's Examination of Leibniz Examined ", *Philosophy of Science*, 23, 1956.

not be satisfied with this explication. No doubt they propose others. For my present purpose this disagreement does not matter. We merely need to agree that there is a difference between individuals and characters and that, therefore, when it comes to interpretation, particulars and predicates are different in that they are made to *name* these two different kinds of things. With respect to "name", some insist that predicates are not names or, at least, that they don't name anything in the same sense in which particulars do. My use of "name" is thus controversial.[1] Those who object to it I beg to be patient. If they read on they will see that I have not prejudged what is involved in the controversy.

A *propositional function* (of our calculus) is a string consisting of one predicate and one variable from the class corresponding to the particulars. ' $F(x)$ ', ' $F(y)$ ', ' $G(x)$ ', are conventionally written examples. Propositional functions are not sentences; neither are their counterimages or pendants, i.e. such expressions as ' $f(a)$ ' and ' $g(b)$ ', which, we notice, are not distinguished by a name of their own. (In calculi that count expressions containing free variables as sentences a propositional function must be notationally distinguished from the corresponding sentence. One may for instance use a circumflex, as is done in *Principia Mathematica*, writing ' $F(\hat{x})$ ' for the propositional function and ' $F(x)$ ' for the sentence.)

Anything that can be said or done by mentioning or using a propositional function can also be said or done by mentioning or using the predicate which is its constituent. In particular, no real use has ever been made of it in syntax. The notion serves therefore no purpose whatsoever. It merely creates an apparent syntactical difference between the two kinds of terms. The appearance created is that, unlike particulars, predicates are syntactically unsaturated, that they and they alone among terms are in some sense incomplete. Or, to say the same thing less accurately but perhaps more suggestively, the alleged difference is that when we write down a particular by itself we somehow make sense but that when we want to make the same sort of sense with respect to a predicate we must not write the predicate by itself but, instead, one of its propositional functions. Clearly, this is an illusion. Equally clearly, if an illusory syntactical

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[1] This is not to deny that primitive (undefined) and defined predicates could, and perhaps should, be said to "name" differently. But we need not attend to the difference since, for the purpose of this note, we need not consider defined predicates. See also *Tractatus* 3. 261 and, for a detailed discussion, the first chapter of my book, *Philosophy of Science* (The University of Wisconsin Press).

difference between particulars and predicates is put to philosophical use, it will lead either to futility or, more likely, to error. I am almost ready to turn to the two major errors which, I submit, are in this manner connected with the notion of a propositional function. First, though, I want to supplement what has been said so far with two comments.

1. A character may be exemplified by more than one individual. Some philosophers, particularly among those close to certain classical ideas, insist that this is indeed the very essence or nature of characters. Propositional functions may be thought of as the syntactical image of this feature. Quite so. I would not argue. I merely remark that in exactly the same manner it is of the very essence or nature of individuals that an individual may exemplify more than one character. Again, the syntactical image of this feature is provided by such expressions as '$f(a)$', or, when we must write that way, '$\hat{f}(a)$'. Why, then, I ask, have we not invented a name for this latter kind of expressions and considered them on the same footing as propositional functions?

2. In calculi containing primitive relational signs the class of predicate terms is, by shape, divided into subclasses. One way of marking the division is to make an index, say, a right superscript, a part of the shape. ' F^3 ', for instance, would then be a predicate which, as we know from its shape, combines with three particulars, but not with one or two or any other number, into a sentence. And, needless to say, order can no longer be neglected. This is a real syntactical difference between predicates and particulars. Only, it has nothing whatsoever to do with the apparent difference involved in the notion of a propositional function. The contrary appearance is due to the fact that another way of marking, whenever it matters, the syntactical difference among the several kinds of predicates is to use such expressions as ' $F(x,y,z)$ ' or ' $F(\hat{x}, \hat{y}, \hat{z})$ ' instead of ' F^3 '. This is the reason why I preferred to use the monadic predicate calculus for my argument.

I turn now to what I called the two major errors.

I. Anyone who so desires may of course decide to use "individual" and "exist" so that (a) "only individuals exist" becomes true. This is rather trivial. Some philosophers, though, hold (a) to be true in a sense involving more than a decision about the use of words. They are called nominalists; the proposition they hold is of the sort called ontological. To state accurately what an ontological proposition means and what, therefore, if

anything, one asserts or denies by either asserting or denying it is rather difficult. Certainly it is not trivial. Fortunately, I need not here for my purpose dissolve the difficulty. I happen to believe that the nominalists are mistaken. But I mention this merely because I want to make it as clear as I possibly can that nominalism itself is not one of the two errors I have in mind. That this be clear is important because nominalism is connected with one of these errors. The connection is that, irrespective of whether or not nominalism is erroneous, it is an error to believe that a certain argument or reason, which a nominalist may be tempted to put forth in support of his nominalism, is a good reason or argument. This latter error is one of the two I do have in mind. Let me then explain it and connect it, in turn, with the notion of a propositional function.

If one wishes, he may decide to use "name" so that (b) 'only what exists can be named' becomes true. Assume that one who makes this decision also makes the one mentioned in the last paragraph. Thus holding both (a) and (b) to be true, he must, if he wants to be consistent, also hold that (c) ' only individuals can be named ' is true. If he merely wishes to make (two independent) decisions about the use of words, he will not get into trouble. But consider now someone who believes (a), (b), and (c) to be true in a sense involving more than such a decision. Him we may call a nominalist. Naturally, he will search for reasons or arguments to support his belief. Since (c) is in the manner I indicated connected with (a), he should, and probably will, welcome any reason or argument that seems to support (c). One specious argument of this sort rests on the specious distinction between particulars and predicates which involves the notion of a propositional function.

Made explicit, the argument has (among others) two premisses. (We need not bother with its other premisses or consider any of its steps but one.) The first is that, as we ordinarily speak, we tend to use "name" so that a word is a name if and only if, used by itself, it somehow makes sense in a way in which other words don't. This premiss is probably sound. The second premiss is that there is a syntactical difference between particulars and predicates to the effect that what syntactically corresponds to a particular, which somehow can " stand by itself ", is not a predicate, which somehow cannot stand by itself, but, rather, a propositional function. Hence, so the argument continues, only individuals can be named, or, what amounts to the same thing, predicates are not names. The second premiss, we saw, is specious. Thus the argument collapses.

II. As mathematicians use the word, a *function* coordinates to each member of a certain domain, say real numbers, a member of the same or another domain. The square-function, for instance, coordinates to the number 2 the number 4. The number 4 is called the " value " of this particular function for the " argument " 2. The phrase " propositional function " suggests, therefore, that the sentence obtained by replacing the variable of a propositional function by a certain particular is the " value " of this propositional function for that particular. Nor is that all. Since particulars are names, there is the further suggestion that sentences, too, may be names of something. To assume uncritically that a sentence is the name of anything in the same sense in which particulars and, according to some, both particulars and predicates are names is to court philosophical trouble. The trouble is so notorious that I shall say no more about it. The uncritical assumption is, I submit, the second major error structurally connected with the notion of a propositional function. Some champions of the notion even carried this line of thought to the absurd extreme of maintaining that, depending on whether it is true or false, every sentence is in some nebulous sense a name of one of two nebulous things, called " truth " and " falsehood ", respectively.

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